ABSTRACT

A method and apparatus to perform a real-time drift correction of a remote handset's local oscillator in a digital cordless telephone. The remote handset begins in a standby (sniff) mode. The remote handset periodically wakes from a sleep mode and goes into a normal link verification mode. Once in the link verification mode, the remote handset enters a time division duplexing (TDD) mode and attempts to establish a link with a base unit based on the timing of the TDD data frame. After the remote handset establishes a link with the base unit, the remote handset requests a security word from the base unit. Upon receiving the requested security word, the remote handset determines if the requested security word matches a security word of the remote handset. The remote handset implements a software frequency adjustment of its local oscillator. Once per frame, the remote handset enters a timing recovery state where the current state of the frame is compared with a previous state. When the cumulative timing slip is greater than a designated threshold, a frequency adjustment is made. During this exchange of commands between the remote handset and base unit, the remote handset continuously adjusts its local oscillator to achieve frequency alignment within, e.g., 1 part per million (ppm). Alternatively, frequency alignment may be achieved to a specified value. The period of the frequency alignment can be lengthened (or even suspended) during certain power critical modes to reduce power consumption. For example, the period of the link verify operations (and thus the frequency alignment) can be lengthened or suspended when the remote handset is being quick charged. Moreover, the period of the link verify operations can be adjusted based on a voltage level of the battery in the remote handset.